

REMARKS

Claims 1-7 and 19-24 are pending in the application. Applicants respectfully request reconsideration of the pending claims in light of the arguments and remarks that follow.

I. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

A. ¶ 3 Rejection of Claims 1-7 and 19-24

In the present Office Action, the Patent Office has rejected claims 1-7 and 19-24 under 35 U.S.C. § 103(a) as purportedly being unpatentable over U.S. Patent No. 2,292,469 to Olsen (the “Olsen ‘469 Patent”) in view of U.S. Patent No. 4,094,248 to Jacobson (the “Jacobson ‘248 Patent”) and U.S. Patent No. 5,682,013 to Smith *et al.* (the “Smith ‘013 Patent”). The Applicants respectfully traverse these rejections and assert that the claims are in condition for allowance.

1. Claim 1

Claim 1 is directed to a lacquer composition useful as a propellant comprising from about 15 % to about 70 % by weight of an organic solvent, and from about 0.1 % to about 2.5 % by weight of a stabilizer. The lacquer composition may optionally include from about 0 % to about 40 % by weight of an energetic plasticizer, from about 0 % to about 10 % by weight of a nonenergetic plasticizer, and from about 0 % to about 15 % by weight of additional additives. The balance of the composition % by weight is comprised of nitrocellulose, and all weight percentages are based on the total weight of the lacquer composition. The claimed lacquer composition has a viscosity of less than 10 million centipoise when processed, and is processed into perforated propellant grains.

2. Cited Combination

The Patent Office asserts that the Olsen ‘469 Patent teaches a propellant composition that comprises nitrocellulose, ethyl acetate as solvent (Page 2, Col. 1: 10-11), diphenylamine, dibutylphthalate, and nitroglycerin. The Patent Office further asserts that the Olsen ‘469 Patent describes lowering the viscosity of the lacquer by adding more solvent since lower viscosities allegedly tend to speed purification. The Patent Office further asserts the lacquer described by

Olsen may be extruded through dies to form a perforated cylindrical grain or further changed into any desired form.

However, the Patent Office admits that the percentage by weight of solvent claimed in the Applicants' invention "are not shown in the disclosure" and it attempts to cure this deficiency by arguing that Olsen "indicates in several places the ratio of solvent to nitrocellulose...[t]hese ratios can readily be converted into percentages." Office Action dated November 14, 2003, p. 4, 2-3. The Patent Office does not address the claimed percentage by weight of stabilizer.

3. Claim 1 is Patentable Over the Cited Combination

It is well settled that for a claim to be anticipated, each and every element of that claim must be shown in a prior art reference, either explicitly or under principles of inherency. *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Moreover, to establish a *prima facie* case of obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was claimed by the applicant. *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000).

However, when the cited references taken together fail to disclose even one element of the claimed invention, there can be no motivation to modify the prior art to arrive at the claimed invention. *See Kotzab*, 217 F.3d at 1370. The Applicant respectfully submits that the Olsen '469 Patent does not disclose, teach or suggest the claimed lacquer composition comprising from about 15 % to about 70 % by weight of an organic solvent, and from about 0.1 % to about 2.5 % by weight of a stabilizer.

A. The Claim Percentage By Weight of Solvent

As stated above, the Patent Office asserts that the Olsen '469 Patent teaches the claimed lacquer composition of claim 1 because the Olsen '469 Patent describes ratios of solvent to nitrocellulose. However, the Patent Office expressly admits that Olsen does not teach the claimed percentage by weight of solvent. In an attempt to cure this deficiency, the Patent Office baldly states that "[i]t would have been obvious to vary the viscosity of the lacquer to suit any purpose since Olsen suggests that this can be easily done by varying the amount of solvent. There is no indication that the viscosity obtained by Olsen is any different than that which is claimed by the Applicant." The Patent Office goes on to assume that the viscosity is an

“inherent property,” and therefore, “[i]t would be obvious to vary the amounts of solvent and nitrocellulose within the ranges indicated by Olsen.” Nonetheless, none of these make up for the fact that the Olsen ‘469 Patent does not disclosed the claimed percentage by weight of solvent.

To provide further illustration, the Patent Office fails to show how describing parts ratios of solvent to nitrocellulose leads to the claimed percentages by weight claimed by the Applicant. The claimed invention describes the solvent as a percentage by weight of the lacquer composition, which also includes a stabilizer, and wherein the balance is made up of nitrocellulose. The claimed percentages are important features of the invention that must be considered for their patentable weight. Indeed, the present situation is very similar to that addressed by the Federal Circuit in *Akzo N.V. v. International Trade Comm’n*, 808 F.2d 1471, 1 U.S.P.Q.2d 1241 (Fed. Cir. 1986). In *Akzo*, the Federal Circuit held that claims to a process for making aramid fibers using a 98% solution of sulfuric acid were not anticipated by a reference which disclosed using sulfuric acid solution but which did not disclose using a 98% concentrated sulfuric acid solution. *See id.* For the same reason, the Olsen ‘469 Patent does not disclose, teach or suggest the claimed lacquer composition comprising at least from about 15 % to about 70 % by weight of an organic solvent

In stark contrast, the Olsen ‘469 Patent teaches that “consideration must be given to minimizing the amount of solvent employed, as high ratios of solvent not only increase the expense of solvent recovery, but increase the loss thereof.” Olsen ‘469 Patent, Page 2, Col. 1: 26-30. Since the Olsen ‘469 Patent suggests low solvent compositions, it further suggests that using “nitro-cellulose having low inherent viscosity is favored.” Olsen ‘469 Patent, Page 2, Col. 1: 37-41. Contrary to the Patent Office’s assertions, this teaching does not suggest the lowering of the viscosity of the entire lacquer composition as inherent, but only refers to using a low viscosity constituent nitrocellulose. Olsen suggests the low solvent compositions that the Applicants have identified in the prior art as inefficient, and the Applicants’ claimed composition has distinct advantages over such compositions. As described in the Applicants’ specification, the claimed lacquer composition may be extruded through a die assembly at a pressure of between about 30 and 200 pounds per square inch, whereas conventional extruded lacquers

having between 0-15% by weight solvent require a pressure in the range of between about 1000 and 5000 psi to extrude. *See Applicants' Specification, Page. 10.*

Even if the unexplained parts ratios of solvent to nitrocellulose would lead to the claimed percentages by weight, the Patent Office must withdraw this rejection because the Olsen '469 Patent does not teach the claimed subject matter with "sufficient specificity" as required under the Patent Statute. *See also Minnesota Mining & Manuf. Co. v. Johnson & Johnson Orthopedics, Inc.*, 24 U.S.P.Q.2d 1321, 1329 (Fed. Cir. 1992) (finding no clear error in review of lower finding that "chemicals that JJO alleges are lubricants do not anticipate because they are either *used in the wrong form or in too small an amount to function as lubricants as required by the claims*"); *Ultradent Products, Inc. v. Life-Like Cosmetics, Inc.*, 44 U.S.P.Q.2d 1336, 1341-42 (Fed. Cir. 1997) (discussing whether disclosed broad range which may provide composition characteristics required by the claims, with several possible compositions for the range of concentrations, teaches to one of ordinary skill in the art the limitations of the claims).

In addition, there is no evidence that the Olsen '469 Patent would enable the claimed invention. *Akzo N.V. v. International Trade Comm'n*, 808 F.2d 1471, 1 U.S.P.Q.2d 1241 (Fed. Cir. 1986) (stating that it is also well settled that a prior art reference must be enabling, placing the allegedly disclosed matter in the possession of the public). The patent office admits that "since no amount is disclosed by Olsen there is no way to know that the amount isn't the same amount that is claimed by Applicant." Office Action dated November 14, 2003, p. 3-4. This admission alone demonstrates that the Olsen '469 Patent does not enable the claimed invention. There is no evidence that the skilled rountineer would arrive at the claimed invention, except by mere happenstance, by selecting various weight percentages of the claimed solvent as it may relate to nitrocellulose. *See In re Baird*, 16 F.3d 380, 382 (Fed. Cir. 1994); *see also In re Jones*, 958 F.2d 347, 350 (Fed. Cir. 1992). There can be no anticipation nor obviousness in this situation.

B. The Claimed Percentage By Weight of Stabilizer

Furthermore, the Patent Office incorrectly states that "the claims only require nitrocellulose and solvent and list all other ingredients...as optional." Office Action dated November 14, 2003, p.3. The claimed composition requires from about 0.1 % to about 2.5 % by

weight of a stabilizer. The Patent Office did not address the claimed percentage by weight of stabilizer in making its latest rejection. As stated above, for anticipation or obviousness, the prior art must teach each and every element of the claimed invention, and when it does not, the claim should be allowed. In contrast to the present invention, the Olsen '469 Patent does not disclose, teach or suggest that the claimed composition includes from about 0.1 % to about 2.5 % by weight of a stabilizer. Accordingly, the present rejection must be withdrawn.

CONCLUSION

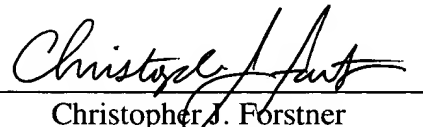
For all of the above reasons, the Applicants respectfully submit that the rejection of claim 1 under 35 U.S.C. §103(a), as purportedly being unpatentable over the Olsen '469 Patent in view of the Jacobson '248 Patent and the Smith '013 Patent should be withdrawn, and claim 1 placed in condition for allowance. For similar reasons, claims 2-6 and 19-21, which depend on claim 1, and claim 7, which includes similar ranges that are not taught by the prior art, and claims 2-6 and 22-24, which depend on claim 7, should all be placed in condition for allowance.

Applicants respectfully submit that all pending claims are in condition for allowance. Should the Examiner determine that any further action is necessary to place the claims in condition for allowance, the Examiner is kindly requested (and encouraged) to telephone the Applicants' undersigned representative at the number listed below.

Respectfully submitted,
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